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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/696,962	10/30/2003	Chris A. Benson	14080	8472

7590 05/31/2005

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EXAMINER

SZEKELY, PETER A

ART UNIT

PAPER NUMBER

1714

DATE MAILED: 05/31/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/696,962	BENSON ET AL.	
	Examiner	Art Unit	
	Peter Szekely	1714	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 October 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>6/29/04</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 1-17 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for ethylene diamine phosphite and melamine with nanoclay, does not reasonably provide enablement for all non-halogenated flame retardants and any synergist. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the invention commensurate in scope with these claims. There is no other non-halogenated flame retardant mentioned in the specification. "Complex salt" is not a chemical composition. There is no other synergist mentioned either. One of ordinary skill in the art would not know which materials are included in applicants' invention. Nitrogen, ammonia and water are non-halogenated flame-retardants, but their use in polymers is somewhat problematical.

3. Claims 4 and 12 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for ethylene diamine phosphate and melamine, does not reasonably provide enablement for all phosphates. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the invention commensurate in scope with these claims.

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No other phosphates are mentioned in the specification. Phosphate salts of alkali and alkaline earth metals are not suitable flame-retardants for polymers.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 1-15 are rejected under 35 U.S.C. 102(e) as being anticipated by Ebrahimian et al. 6,797,760.

6. Ebrahimian et al. disclose polymer and nanoclay in claim 1, polypropylene in claim 3, phosphates in claim 17, melamine octa-molybdate in claim 21 and concentrations in claims 22 and 24. The oxygen index cited in claim 23 fulfills the flammability-rating requirement. For synergy see Tables I and IV. Applicants' claims are not novel.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

9. Claims 1-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ebrahimian et al. 6,797,760, in view of Bodiger et al. 5,849,827.

10. Ebrahimian et al. has been discussed already. Bodiger et al. teach polymer and nanoparticles in claim 1, TiN, silica and WC in claim 6 and phosphate flame-retardants in claims 19-20. It would have been obvious to one having ordinary skill in the art, at the time the invention was made, to use an organophosphate flame-retardant in the composition of Ebrahimian et al., because Bodiger et al. prove that the flame retardance of polymers improve if an organophosphate is used with both metal oxide and non metal oxide nanoparticles.

11. Claims 1-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nalepa et al. 5,204,393, in view of Bodiger et al. 5,849,827.

12. Nalepa et al. recite polyolefin, ammonium polyphosphate, and melamine cyanurate with small particle size silica in claim 1, concentrations in claims 1 and 4, polypropylene in claim 10 and flame retardant article in claim 12. Bodiger et al has


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been discussed already. Although the particle size of the silica claimed by Nalepa et al. is defined only as less than 4.5 microns, it would have been obvious to one having ordinary skill in the art, at the time the invention was made, to use silica in the particle size range claimed by Bodiger et al., since this would maximize the surface area and would, according to Bodiger et al., result in maximum flame retardance, when used in conjunction with organophosphates.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Peter Szekely whose telephone number is (571) 272-1124. The examiner can normally be reached on 7:00 a.m.-5:30 p.m. Tuesday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on (571) 272-1119. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Peter Szekely
Primary Examiner
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